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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,051	04/27/2001	William A. Weber	2001B035	2702
23455	7590	02/25/2004	EXAMINER	
EXXONMOBIL CHEMICAL COMPANY			DANG, THUAN D	
P O BOX 2149			ART UNIT	PAPER NUMBER
BAYTOWN, TX 77522-2149			1764	

DATE MAILED: 02/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/844,051

Applicant(s)

WEBER ET AL.

Examiner

Thuan D. Dang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 4-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 4-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 4, the term "essentially free of sulfided hydrogenation metal" is a new matter since in the specification does not define the meaning of the term and how much of the amount of sulfided hydrogenation metal is covered by this term (see the entire the specification of this application; namely, page 6, lines 26-27).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-17 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Regarding claims 4 and 17, the term "essential free of sulfided hydrogenation metal" and "substantially free of sulfided hydrogenation metal" is indefinite since what amount of "sulfided hydrogenation metal" present in the claimed catalyst is considered to be "essentially free" or "substantially free" of sulfide hydrogenation metal.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4-10 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suggitt (3,780,123).

Suggitt discloses a process of disproportionation of cumene in the presence of a MOR catalyst to produce a product containing benzene and a mixture of diisopropylbenzene.

It appears that Suggitt discloses using a feed containing no benzene (see the entire patent for details).

On column 8, lines 47-55, Suggitt mentions that the catalyst may contain a very small amount of metals (see the above 112 rejection).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Suggitt process by making catalysts containing very small amount of VIII metals such as 0.2 wt % or even less than 0.2 wt % so that it is considered to be "essentially free" or "substantially free" to arrive at the applicants' claimed process since it is expected that the Suggitt catalysts containing any amount of VIII metals provided that there is the presence of VIII metals in the catalyst has similar activities (col. 8, lines 47-49).

It appears that Suggitt does not disclose a mordenite as called for in claim 8. However, It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Suggitt process by selecting a mordenite as called for in claim 8 since it is expected that using any MOR for the Suggitt process yields similar results.

The condition of the process can be found on column 4, lines 17-34.

The product as called for in claims 14-16 is only a result of a Suggitt process which is operated in the presence of substantially the same catalyst.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suggitt (3,780,123) in view of Calabro et al (6,049,018)

Suggitt discloses a process as discussed above.

Suggitt does not disclose that the cumene is produced from an initial step of alkylating benzene with propylene and benzene is recycled to the alkylation step (see the entire patent to Suggitt for details). However, Calabro discloses an alkylation of benzene with propylene for production of cumene (col. 7, lines 26-32).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Suggitt process by incorporating the alkylation step of Calabro into the Suggitt process and using the cumene produced by the Calabro alkylation step since it is expected that using any source of cumene yield similar products.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Suggitt process having been incorporated with the alkylation of Calabro by recycling any benzene in the disproportionation product to the alkylation to increase the production.

#### ***Response to Arguments***

Applicant's arguments filed 1/12/04 have been fully considered but they are not persuasive.

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The argument that the specification makes clear on page 6, lines 26 and 27, that no sulfided hydrogenation is intended or **any amount present would be minimal** is not persuasive since this teaching only disclose that "the molecular sieve used in the process of the invention does **not** contain the sulfided hydrogenation metal disclosed in U.S. patent 3,780,123". This teaching is not the definition for the term "essentially free". This teaching only exclude metals disclosed by that patent, not other metals in other patents. Further, this teaching is clearly inconsistent with the argument raised by applicants "any amount present would be minimal" (see above).

The argument that present claims require neither sulfided hydrogenation metal is not persuasive since as argued by applicants (see the above response by the examiner), the claimed catalyst contains a minimal amount of sulfided hydrogenation metal.

***Allowable Subject Matter***

Claim13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 571-272-1445. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuan D. Dang  
Primary Examiner  
Art Unit 1764

09844051.20030216  
February 16, 2004

A handwritten signature in black ink, appearing to be 'Thuan D. Dang', written in a cursive style.